

# Remote Sensing Applications Division (RSAD)

**CDR Program Office** 

Weekly Report for June 3, 2011 John J Bates, Chief



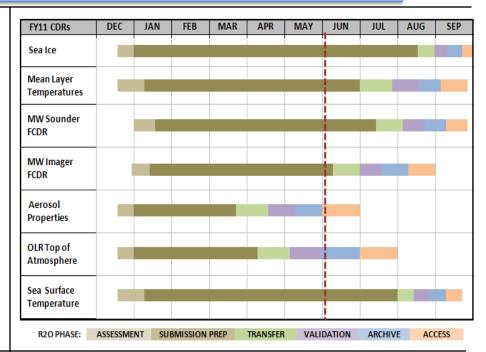
# **CDR Program Office**

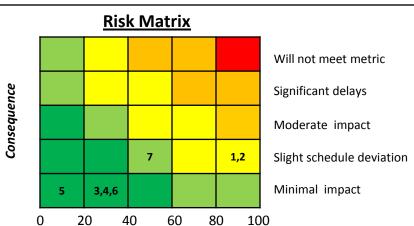
# **FY11 Climate Data Records**

#### Weekly Report – June 3, 2011

- 1 Sea Ice
  - NSIDC code developers working on extracting daily ice module
- 2 Mean Layer Temperatures
  - PI sent good metadata inputs and is working on code comments
- 3 Microwave (MW) Sounder FCDR
  - PI posted initial data delivery (Ch 9) for download/review
- 4 Microwave (MW) Imager FCDR
  - POC working on CATBD
- S Aerosol Properties
  - Data and code has been archived; waiting on MM approval
- 6 Outgoing Longwave (LW) Top of Atmosphere
  - Received final code and documentation delivery
- **7** Sea Surface Temperature
  - Draft SLA btwn NCDC and NODC is being reviewed

**Probability of occurrence** 





#### **Risk and Mitigation**

#### Sea Ice

• Recoding needed on data/algorithms – schedule is at FY11 limit

#### **Mean Layer Temps**

• PI is exceedingly busy – will continue to monitor progress

#### **Sea Surface Temp**

• Drafted SLA – Needs to be reviewed and routed for signatures

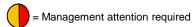
#### **Borg Servers**

• Potential CDR delays if servers remain degraded – other options available

#### PREDECISIONAL DRAFT INFORMATION







# Sea Ice

**CDR Product**: TCDR - Sea ice concentration/extent/area estimates, 1979-2010 (20 GB)

GEOSS Societal Benefit: Climate, Water, Ecosystems, Agriculture

## **Project Status**

- Code developers continue to work
  - Developers will ensure data is CF v1.5 compliant
  - This is the best time for inputs from the Archive Branch
- Should receive sample data file next week
- NSIDC code developers are working on pulling out the daily ice module that will read swath data, regrid, and feed algorithms
  - CDRP understands there is a schedule risk, but its necessary to maintain transparency and reproducibility of the CDR

## **Next Action / Milestone**

• PI to send POC sample doc and code



## **Project Risks**

- If Monthly product is wanted, it will postpone delivery a little
   monthly product is just the average of the daily values
- NSIDC will be serving the data to the public
  - PI seems fine with the SLA concept btwn NCDC/NSIDC
- The codes that will be delivered are modular pieces of a much larger code need CDR policy decision for source code release

RSAD POC: Peng

ID	Task Name	Status	Start	Ston		FY11 Q1			FY11 Q2			FY11 Q3			FY11 Q4	
IU	Task Name	Status	Start	Stop	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	12/7/2010	1/7/2011												
2	Transfer Prep	40	1/7/2011	8/15/2011												
2a	Comment Source Code	50	4/15/2011	8/15/2011												
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	50	1/7/2011	8/15/2011												
2c	Convert data from binary to NetCDF	0	3/1/2011	8/15/2011												
3	Tranfer Code, Docs, and Data	0	7/15/2011	8/31/2011												
4	Verify Code, Docs, and Data	0	7/31/2011	9/7/2011												
5	Archive Code, Docs, and Data	0	8/15/2011	9/21/2011												
6	Provide Access to Code, Docs, and Data	0	9/1/2011	9/30/2011												

# **Mean Layer Temperatures**

CDR Product: TCDR - Monthly gridded anomalies for three layers (LT, MT, LS), 1978-2010 (60 GB)

**GEOSS Societal Benefit:** Energy, Climate, Ecosystems

## **Project Status**

- PI is working on code documentation
  - will need to keep pressing for CATBD and remaining docs
- PI sent spreadsheet that helped fill in the NetCDF fields
- Mike Urzen is working on NetCDF conversion
- Working on SA Phil has a good schedule to complete all SAs by mid June

## **Next Action / Milestone**

- Work on NetCDF conversion
- PI needs to work on source code and documentation



- Data is ASCII format Mike Urzen will convert to NetCDF
- PI has limited resources available to work on code clean up, comments and documentation – need to monitor progress

ID	Task Name	Status	Start	Ston		FY11 Q2			FY11 Q3		FY11 Q4		
IU	Task Natile	Status	Start	Stop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	1/1/2011	1/15/2011									
2	Transfer Prep	20	1/15/2011	6/30/2011									
2a	Comment Source Code	50	1/15/2011	5/15/2011									
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	20	3/15/2011	6/15/2011									
2c	Convert from ASCII to NetCDF	10	4/30/2011	6/30/2011									
3	Tranfer Code, Docs, and Data	0	6/21/2011	7/21/2011									
4	Verify Code, Docs, and Data	0	7/15/2011	8/15/2011									
5	Archive Code, Docs, and Data	0	8/7/2011	9/7/2011									
6	Provide Access to Code, Docs, and Data	0	9/1/2011	9/30/2011									

# Microwave Sounder FCDR

CDR Product: FCDR - AMSU-A Brightness Temperature, CH 7 & 9; 2001 - 2010 (100 GB)

**GEOSS Societal Benefit:** Climate, Water, Ecosystems

#### **Project Status**

- PI is working on metadata and documentation
- Postedsample (CH9) data Anand will pull for review
- Met with Phil to discuss SA progress
  - will add the GPS intercalibrated orbit files to the SA
- · Working on SA Anand is helping
- PI will convert data to NetCDF

#### **Next Action / Milestone**

• Expect all CH9 by end of May, and CH7 in July



- PI concerned about his source code being widely available
  - PI would like to be the one to distribute it
  - Need CDRP managers to develop policy letter

ID	Task Name	Status	Start	Ston		FY11 Q2			FY11 Q3			FY11 Q4	
טו	Task Name	Status	Start	Stop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	1/1/2011	1/15/2011									
2	Transfer Prep	50	1/15/2011	7/30/2011									
2a	Comment Source Code	50	1/15/2011	5/30/2011									
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	50	3/15/2011	6/30/2011									
2c	Format Data for delivery	50	4/30/2011	7/30/2011									
3	Tranfer Code, Docs, and Data	0	6/1/2011	8/8/2011									
4	Verify Code, Docs, and Data	0	7/1/2011	8/15/2011									
5	Archive Code, Docs, and Data	0	8/1/2011	9/8/2011									
6	Provide Access to Code, Docs, and Data	0	9/1/2011	9/21/2011									
			·										

# Microwave Imager FCDR

CDR Product: FCDR - Intercalibrated SSM/I Brightness Temperatures (v6), 1987 – 2010 (1720 GB)

**GEOSS Societal Benefit:** Climate, Water, Ecosystems

## **Project Status**

- No Changes
- POC drafted submission agreement
  - Waiting on Word version with comments from Archive Branch
  - POC anticipates being ready to archive by end of June
- POC is making progress on CATBD
- Completed source code comments and created source code header document with robodoc

#### **Next Action / Milestone**

Work on CATBD and remaining documentation



- PI will not assist making the data an operational CDR
- POC will be responsible for converting data to NetCDF, documentation, and commenting the code.

ID	Task Name	Status	Start	Ston		FY11 Q2			FY11 Q3		FY11 Q4		
10	1 dok (Ndille	Status	Start	Stop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	1/1/2011	1/15/2011									
2	Transfer Prep	80	1/1/2011	5/31/2011									
2a	Comment Source Code	100	1/1/2011	3/31/2011									
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	75	1/1/2011	5/31/2011									
2c	Format data from binary to NetCDF	100	2/1/2011	4/30/2011									
3	Tranfer Code, Docs, and Data	50	5/21/2011	6/21/2011									
4	Verify Code, Docs, and Data	50	6/15/2011	7/15/2011									
5	Archive Code, Docs, and Data	20	7/8/2011	8/8/2011									
6	Provide Access to Code, Docs, and Data	0	8/1/2011	8/31/2011									

# **Aerosol Properties**

CDR Product: TCDR - Aerosol Optical Thickness (AOT), 1981 – 2010 (430 GB)

**GEOSS Societal Benefit:** Disasters, Health, Climate, Ecosystems

#### **Project Status**

- Waiting on MM last item to complete documentation package
- Data and code package is in the archive
- Steve A. is working on putting data on THREDDS for public access

#### **Next Action / Milestone**

- Archive documentation
- Update CDR web page with links to code, docs and data



## **Project Risks**

Minimal

ID	Task Name	Status	Start	Ston		FY11 Q1			FY11 Q2			FY11 Q3			FY11 Q4	
IU	lask Name	Status	Start	Stop	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	11/29/10	12/15/10												
2	Transfer Prep	90	1/1/2011	4/21/2011												
2a	Comment Source Code	100	1/1/2011	1/30/2011												
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	75	1/1/2011	4/21/2011												
2c	Subset CDR variables	100	2/1/2011	4/21/2011												
2d	Format data from HDF to NetCDF	100	2/15/2011	4/21/2011												
3	Tranfer Code, Docs, and Data	75	3/21/2011	4/30/2011												
4	Verify Code, Docs, and Data	75	4/15/2011	5/15/2011												
5	Archive Code, Docs, and Data	75	5/8/2011	6/8/2011												
6	Provide Access to Code, Docs, and Data	0	6/1/2011	6/30/2011												

# **Outgoing Longwave Radiation - Top of Atmosphere**

**CDR Product**: FCDR - HIRS OLR Time Series, monthly mean, 2.5 deg, 1979 – 2010 (CDR : 20 MB, Orbit Files: 700 GB) **GEOSS Societal Benefit**: Energy, Climate, Ecosystems

## **Project Status**

- Phil is reviewing the SA and helping with metadata (ECD-June 10)
- PI confirmed the file we reproduced matched his original file
- Received final source code PI replaced IDL with Fortran

#### **Next Action / Milestone**

- Complete submission agreement process and data transfer
- · Verify documentation
- · Verify NetCDF format and metadata



## **Project Risks**

· Minimal risk involved

ID	Task Name	Status	Start	Ston		FY11 Q1			FY11 Q2			FY11 Q3			FY11 Q4	
טו	I dSK NdITIE	Status	Start	Stop	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	11/29/2010	12/15/2010												
2	Transfer Prep	85	12/15/2011	4/30/2011												
2a	Comment Source Code	100	12/15/2011	3/31/2011												
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	75	1/1/2011	4/30/2011												
2c	Format data for delivery	100	3/1/2011	4/30/2011												
3	Tranfer Code, Docs, and Data	50	4/1/2011	5/7/2011												
4	Verify Code, Docs, and Data	50	5/1/2011	6/7/2011												
5	Archive Code, Docs, and Data	0	6/1/2011	7/7/2011												
6	Provide Access to Code, Docs, and Data	0	7/1/2011	7/31/2011												

# **Sea Surface Temperature**

**CDR Product**: TCDR - Pathfinder v5.2, Daily nighttime and daytime global SST fields, 1981-2010, (4000 GB) **GEOSS Societal Benefit:** Climate, Water, Ecosystems, Agriculture

## **Project Status**

- Drafted SLA for public access to data passed to Jeff for review
   Scott H. is confident NODC will want to sign also
- All reprocessing complete HDF sent to NODC for netCDF conv

   sample file available on their website for review until 23 May,
   after feedback is analyzed full dataset conversion will take place
   PI plans to convert full dataset by end of June
- · Working on SA
- Documentation hire with CICS, official start date will be 1 July
  - Data will be complete before documentation comes in

## **Next Actions / Milestone**

NetCDF Conversion at NODC



- Processing from level 1b to HDF has been accomplished for all sats - some small gaps exist
- Documentation is via CICS consultant schedule is TBD
- Final SST data set will be maintained at NODC

ID	Task Name	Status	Ctort	C+on		FY11 Q1	l		FY11 (	Q2		FY11 Q3			FY11 Q4	
טו	rask Name	Status	Start	Stop	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	11/29/10	12/15/10												
2	Create HDF product (v5.2) 1981-2010 (UoM)	100	12/15/10	5/21/11				N18	N16	N7 N9 I	N11 N14	1				
3	Convert HDF to netCDF (NODC)	50	2/1/11	6/30/11												
4	Comment Source Code	10	2/15/11	8/21/11						NODC		CICS H	lire			
5	Create Documents	10	2/15/11	8/21/11						NODC		CICS H	lire			
6	Tranfer Copy of Data, Code and Docs	5	5/1/11	8/31/11								Data		C&D		
7	Verify Data, Code and Docs	5	6/1/11	9/7/11									Data	C&D		
8	Archive Data, Code and Docs	0	7/1/11	9/15/11										Data	C&D	
9	Provide Access to Data, Code and Docs	0	8/1/11	9/21/11												
	(Point to Data served at NODC)															

# **BACKUP CDR -- ISCCP D1**

CDR Product: TCDR - Mean Cloud Amount, 2.5 deg res, 3 hourly, 1983-2008, (1.4 GB)

GEOSS Societal Benefit: Energy, Climate, Water, Agriculture

## **Project Status**

- No Reasonable Backup available due to budget constraints
  - additional PI funding would be needed to meet coding standards and create CATBD.
- Initial Assessment Data is already being archived
  - would need to start on documentation and metadata by mid June to be a fill in CDR.

#### **Next Action / Milestone**

 No effort - unless it looks like one of the other CDRs may fail, then primary work will be on documentation



**Project Risks** 

Minimal

ID	Task Name	Status	Start	Stop		FY11 Q3		FY11 Q4				
10	Task Name	Status	Start	Stop	Apr	May	Jun	Jul	Aug	Sep		
1	Initial Assessment	Complete	5/7/2011	5/15/2011								
2	Transfer Prep	25	6/15/2011	9/7/2011								
2a	Comment Source Code		6/15/2011	§ 7/ D V								
2b	Create Docs (CATBD, Flow Chart, MM, Readme)		5) 15 201	3, 7, 2011								
3	Tranfer Code, Docs, and Data	25	9 1/2011	9/15/2011								
4	Verify Code, Docs, and Data		9/1/2011	9/15/2011								
5	Archive Code, Docs, and Data	25	9/8/2011	9/21/2011								
6	Provide Access to Code, Docs, and Data	MA A	9/15/2011	9/30/2011								

# **FUTURE CDR -- Global Surface Albedo**

**CDR Product**: TCDR – GOES coverage Surface Albedo, 10 day blocks, 4 km res, 2000-2003 (initially), (150 GB) **GEOSS Societal Benefit:** Climate, Ecosystems, Agriculture

## **Project Status**

- EUMETSAT contact has been back on the project since beginning of May
  - work is primarily on algorithm differences and input formats
- Plan to process GOES test set by the end of July
- Then proceed with validation of output

#### **Next Action / Milestone**

Stage GOES test data



#### **Project Risks**

 Requires extensive coordination with EUMETSAT for code, documentation and validation

ID	Task Name	Status	Start	Stop		FY11 Q1			FY11 Q2			FY11 Q3			FY11 Q4	
ID	Task Name	Status	Start	Stop	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment		11/29/10	12/15/10												
2	Stage 4 yrs of GOES data		12/15/10	1/14/11												
3	Write GOES preprocessing sw		12/8/10	1/7/11												
4	Write Model Ozone/H2Ov ingest		1/7/11	2/6/11												
5	Generate GOES-12 LUT		1/1/11	1/31/11												
6	Format Data for archive (NetCDF4)		1/1/11	3/2/11												
7	Receive/test AREA ingestor		3/3/11	10,												
8	Processing - 4 year POR		5/1	(30/												
9	Tranfer Remaining Docs		6/22 1	7/1/11		1/4/										
10	Validate Code, Docs, and Data		7/8/11	7/15/11												
11	Archive Code, Docs, and Data		7/16/11	8/7/11												
12	Provide Access to Code, Docs, and Data		8/8/11	8/18/11												

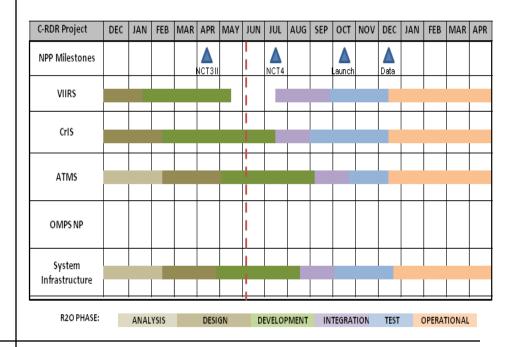


# **CDR Program Office**

# NPP/JPSS Climate Raw Data Records (C-RDRs) Project

#### Weekly Report - June 03, 2011

- 1 VIIRS
  - Developing code to write the VIIRS C-RDR.
- 2 CrIS
- Developing code to write the CrIS C-RDR.
- Delaying CrIS C-RDR development until CrIS code is available.
- 3 ATMS
  - Developing code to write the ATMS C-RDR.
- 4 OMPS NP
  - Analyzing OMPS NP code and update OMPS NP schedule.
- 5 System Infrastructure
  - Completed development of scripts for system throughput test. Updating configuration files for ingest and dissemination.
- Schedule has been reworked and currently verifying resource allocations



# Risk and Mitigation

#### VIIRS, CrIS, ATMS, OMPS NP, System Infrastructure -

- Short schedule to NPP launch on October 2011.
- Operational software is under maintenance, updated versions may affect C-RDR ported version.
- Contractor claims CrIS DR software is proprietary so cannot use for development. Working with old (2007) version of CrIS code. Delay till claim is resolved.

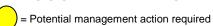
#### System Infrastructure -

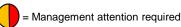
Availability of automated receipt of NPP RDRs from the CLASS system.
 Need to test ingest of RDRs from CLASS and develop an automated mechanism for re-requesting data.

#### **Risk Matrix** Will not meet metric Consequence Significant delays Moderate Impact 4 3 5 Slight sched deviation Minimal Impact 1 0 20 40 60 80 100 Probability of occurrence

: On-track

PREDECISIONAL DRAFT INFORMATION





# Visible Infrared Imaging Radiometer Suite (VIIRS)

**C-RDR Product**: Raw sensor measurements with usage and provenance metadata in easily accessible netCDF4 format **GEOSS Societal Benefit**: Climate, Water, Ecosystems, Agriculture, Biodiversity, Energy

#### **Project Status**

- Attending the ADL 3.0 release TIM.
- Developing software to create the C-RDR, reusing the ADL.
- Completing release of netCDF4 file creation toolset.
- Developed and demonstrated toolset to define and initialize netCDF4 files.
- · ADL modified to process aggregated RDRs
- Evaluating ADL for processing granule aggregations
- Evaluating IDPS latest release changes in Algorithm Development Library (ADL) baseline
- Defining the C-RDR format, data, and metadata
- Ported operational algorithms from NASA Land PEATE

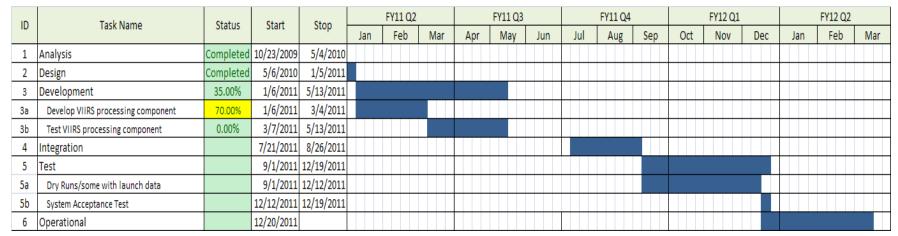
#### **Next Action / Milestone**

• Development complete for the VIIRS C-RDR



#### **Project Risks**

- NPP Launch Date: October 25, 2011
- Complexity of the NPP/JPSS RDRs and operational software
- Operational software is under maintenance, updated versions may affect C-RDR ported version



# **Cross-track Infrared Sounder (CrIS)**

**C-RDR Product**: Raw sensor measurements with usage and provenance metadata in easily accessible netCDF4 format **GEOSS Societal Benefit**: Climate, Water, Energy

## **Project Status**

- Delay additional development until CrIS SDR code is available. Need updated CrIS SDR code for additional development.
- Developing and debugging code to create data structures for writing the C-RDR.
- Creating a MATLAB reader for the C-RDR to provide easy access.
- Evaluating processing of C-RDR with MATLAB and IDL
- Defining the netCDF4 structure for the C-RDR and developing software for writing the C-RDR
- CrIS IDPS software changes are not available to contractors. This affects C-RDR and ADL development and Cal/Val teams, SDS.
- Ported operational algorithms (Space Dynamics Lab at Utah State)

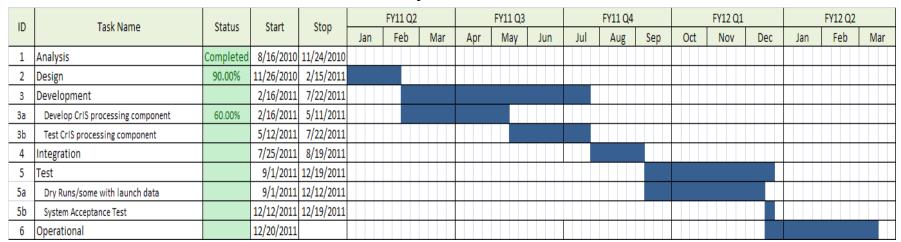
#### **Next Action / Milestone**

Complete definition of CrIS C-RDR



#### **Project Risks**

- CrIS science algorithms not available to contractors: C-RDR team, cal/val teams, ADL developer cannot get CrIS SDR code.
   JPSS Program Office working to resolve issue. Our current version of CrIS code is from 2007.
- NPP Launch Date: October 25, 2011
- Complexity of the NPP/JPSS RDRs and operational software
- Operational software is under maintenance, updated versions may affect C-RDR ported version. Mitigated by using ADL.



# **Advanced Technology Microwave Sounder (ATMS)**

**C-RDR Product**: Raw sensor measurements with usage and provenance metadata in easily accessible netCDF4 format **GEOSS Societal Benefit**: Climate, Water, Energy

#### **Project Status**

- Developing code to write the C-RDR.
- Completed first draft of C-RDR contents.
- · Defining the C-RDR format, contents, and metadata
- Identifying code and data structures required for C-RDR processing.
- · Verified processing of ATMS algorithms
- IDPS ATMS algorithm executing in ADL at NCDC
- Evaluating IDPS algorithms in ADL
- Working to get the ported IDPS software running at NCDC
- Obtained ported operational algorithms (Space Dynamics Lab at Utah State)

#### **Next Action / Milestone**

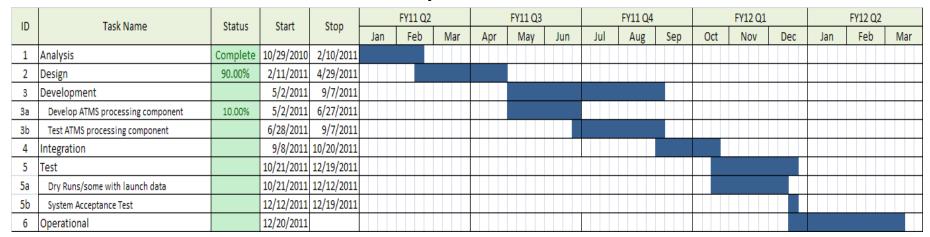
Develop the code to produce the C-RDR



#### **Project Risks**

- NPP Launch Date: October 25, 2011
- Complexity of the NPP/JPSS RDRs and operational software
- Operational software is under maintenance, updated versions may affect C-RDR ported version
- Developer shares time working NPP and CLASS issues.

## **Project Schedule**



6/3/2011 15 **POC: Saunders** 

# Ozone Mapping Profile Suite (OMPS) Nadir Profiler (NP)

**C-RDR Product**: Raw sensor measurements with usage and provenance metadata in easily accessible netCDF4 format **GEOSS Societal Benefit**: Climate, Energy

#### **Project Status**

- Analyzing the IDPS software for the OMPS NP SDR for the use in developing the C-RDR
- Updating the schedule for the OMPS NP C-RDR

#### **Next Action / Milestone**

• Define the C-RDR format, contents, and metadata



#### **Project Risks**

- OMPS NP C-RDRs will not be available at launch. With delay of CrIS need to develop C-RDR for OMPS NP. Need to update schedule.
- Complexity of the NPP/JPSS RDRs and operational software
- Operational software is under maintenance, updated versions may affect C-RDR ported version



# **C-RDR System Infrastructure**

**C-RDR Product**: Infrastructure to automate the production of the C-RDRs.

**GEOSS Societal Benefit:** None

#### **Project Status**

- Completing configuration file updates for ingest and dissemination.
- Completed driver script for the throughput test and staged them on the Blade Center.
- Creating database tables and access procedures for the database to handle configuration files.
- Setting up configuration files and software for the ingest test.
- Developing an ingest test using the aggregated RDRs.
- Working with RSAD projects to define process to transfer data to and from CLASS
- · Working on database infrastructure design.
- Analyzing existing ingest and dissemination capabilities.
- Completed the Archive Recommendation Package for C-RDRs.

#### **Next Action / Milestone**

· Perform the throughput test.



#### **Project Risks**

- NPP Launch Date: October 25, 2011
- Need to hire additional software developer to meet schedule.
- Ability of CLASS to provide full stream of RDRs and ability to ingest stream of C-RDRs.
- Need to develop an automated re-request mechanism for CLASS.

